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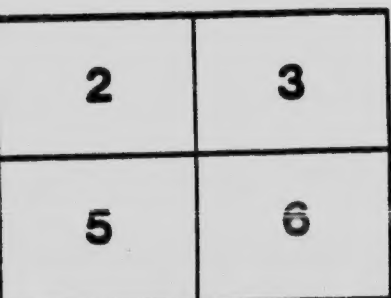
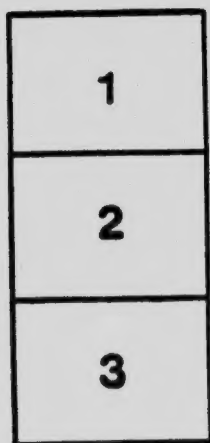
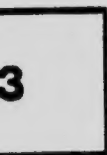
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PAMPHLET No. 29.

DOMINION EXPERIMENTAL FARMS.

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GRANDE PRAIRIE'S CAPABILITIES.**SOME EXPERIMENTAL EVIDENCE**

BY

W. D. ALBRIGHT.

Situated at Beaverlodge, twenty-six miles west of Grande Prairie city and nearly twenty-three east of the British Columbia boundary, being thus fairly well centred in the Grande Prairie District, which spreads out fan-shaped towards the southwest and northwest, is a Dominion Experimental Substation. From a few simple tests undertaken without remuneration in 1914 the work has gradually expanded to a point where thirty acres are now devoted to investigations with cereals, forage crops, vegetables, flowers and fruits.

Both absolutely and relatively the experimental area is high, the topographical survey reading 2 500 feet and the aspect being the southeastern exposure of the crest of a hog's-back ridge. Because of its sharp slope and local elevation it is safer from frost than some other parts of the prairie though not quite so immune as considerable areas in the centre surrounding the larger lakes. This fact is important to bear in mind when considering results with tender crops. It is likewise to be considered in connection with climatic data, for there is believed to be a difference of at least twenty degrees as between the extreme temperatures on high and low land. A disparity of fifteen degrees has been noted between the readings of two official instruments three miles apart, and neither of them representing the extremes of contour at that.

PRECIPITATION AND TEMPERATURES.

Meteorological records at the Beaverlodge Station for the years 1916-19, inclusive, show an average annual precipitation of 15.5 inches, ranging from 10.3 in 1916 to 20.08 in 1919. In connection with the latter season it may be noted that although the precipitation was above normal, yet for purposes of crop production it was rather a dry season in many localities, the bulk of the rain falling in the latter part of the summer. From the standpoint of hay crops it was one of the most adverse seasons on record at the Station. Grains did well.

The lowest winter temperature was -52 Fahr., on January 30, 1917. Second lowest was -48.5 in January, 1916. An unofficial but self-registering instrument kept by the experimentalist during his first few years' residence showed a minimum reading of about 38 Fahr. in the winter of 1913-14 and of -23 Fahr. in the very fine and mild winter of 1914-15.

The average number of days' sleighing for the four years ending December, 1919, was 132.

CEREALS

Cats.—As to cereals, Grande Prairie is pre-eminently an oat country, its climate being especially adapted to produce a large yield and a well filled kernel. Accurately determined yields per acre, from test plots, usually in duplicate, are as follows:—

Variety.—	Yield, 1919.		Four-year Average.	
	Bush.	Lb.	Bush.	Lb.
Banner.. . . .	132	32		—
Victory.. . . .	119	24	100	4
Ligowo.. . . .	113	28	99	19
Abundance.. . . .	111	16		—
Daubeney.. . . .	85	10	79	18
Liberty, O-480 (hullless)	72	2		—



The Banner oat, grown only in 1915 and 1919, has on both occasions headed the list of varieties in yield. Daubeney is an extra-early oat, ripening always with six-rowed barley when sowed at the same date. The new hullless oat, Liberty O-480, promises to be a valuable acquisition. Its yield of 72 bushels 2 pounds of clear meat is equivalent to a little better than 100 bushels per acre of ordinary kinds, and by reason of its naked character it is especially adapted to the feeding of young pigs and poultry and to the making of oatmeal porridge. It is a reasonably early oat, with a strong straw of medium length and does not shatter very easily. The two years' trial of it is most encouraging.

Spring Wheat.—Perhaps not over fifteen per cent of Grande Prairie land district is safe for the growing of spring wheat on a large commercial scale; but many farmers may with advantage include a limited acreage of it in their cropping plans. If frosted it may still make good feed grain, particularly for poultry, and if the worst comes to the worst it may be used as green feed. Early and hardy varieties should be chosen. Five years' trial at Beaverlodge favours the Huron, a cream-floured, red-chaffed, bearded wheat, maturing in the same length of time as Marquis but much hardier, thanks probably to its Ladoga parent. In frost years especially it outyields Marquis by a wide margin, and in 1919, when frost did not affect yields, it still produced a much more attractive sample. Its five-year average yield is 42 bushels 35 pounds per acre, as against 32 bushels 38 pounds of Marquis, from adjoining plots, usually in duplicate.

Barley.—Barley is but a moderately safe crop. Though coming to maturity in a brief period, it does not always escape frost and if caught after heading it is almost as susceptible as wheat. Of three varieties under test, the O.A.C. No. 21 maintains a consistent lead, with a yield of 55 bushels 40 pounds in 1919 and 33 bushels 13 pounds as a four-year average. The Guymalaye hullless, compared for the first time in 1919, acquitted itself very well, with a turnout of 49 bushels 8 pounds per acre. Though rather short of straw it possesses two cardinal merits in being early and fairly wind-resistant.

Peas yield well when they ripen; autumn frosts often forestall maturity. They need to be sown early.

Flax is not a very reliable crop except on favoured areas near the lakes. Primost flax at Beaverlodge yielded over 16 bushels per acre in 1918, however.

Winter Wheat.—In seasons when chinooks do not bare the ground in mid-winter or result in the formation of layers of ice close to the crowns, hardy varieties of wheat succeed quite well in some districts, as high as 45 bushels per acre have been threshed from fields. The Kharkoff or Turkey Red is the most suitable variety during the past two years, in both of which some killing out had occurred, its 1919 yield was 29 bushels 31 pounds, as against 20 bushels 20 pounds from the Liberty Golden Chaff. It matures from two to three weeks ahead of Marquis or Huron spring wheat. The chief objection to this crop is that in spots where it kills out, the native grasses are inclined to re-occupy the ground.

Winter Rye.—Proving almost perfectly hardy during two seasons, winter rye bids fair to fill an important place in Grande Prairie agriculture, especially for the production of late-fall and early-spring pasture and for the provision of winter roughage in seasons when ordinary hay crops may be short. In 1918 unpastured plots at the Station threshed over 57 bushels per acre. Dry weather in early summer curtailed the yield in 1919 to 43 bushels 22 pounds but the two-year average was 50 bushels 11 pounds. Pasturing to June 1 restricted the grain yield by about 40 per cent and delayed maturity a couple of weeks. In some years this would result in no ripe grain at all but it is clear one could always cut a good crop of winter roughage, after pasturing until the first of June. When fodder was not needed, one could take a chance of letting the grain ripen.

FORAGE CROPS.

Grasses and Clovers.—Over 500 plots of grasses and legumes have been seeded at Beaverlodge during the past two years, special effort being concentrated upon the problem of finding what grasses and clovers will do best and how they may be most economically seeded.

Periodical seeding to sod-forming crops is necessary to provide a suitable quality and variety of feed, to maintain soil fertility and to protect the land from erosion.

A permanent handicap in the growing of bumper crops of grasses and clovers is the limited annual precipitation—more particularly the dry weather characteristic of the average spring and early summer (1917 having been a conspicuous exception).

Notwithstanding this drawback certain grasses can be grown with measurable success if seeded alone on well-prepared land.

As a rule, winter-killing is not troublesome so far as the grasses are concerned.

Of ten hay crops tried comparatively, Western Rye grass and timothy appear to be the most suitable, with sweet clover holding considerable promise for the production of summer pasture. It makes a coarse hay.

The true clovers do well when there is plenty of early moisture but they, as well as sweet clover and alfalfa, require artificial inoculation of seed or soil in order to come into their best.

Alfalfa does best on deep, open loams. The surest crop is obtained by sowing it thinly in rows and inter-cultivating.

Of all the grasses, timothy is the one of which it is most easy to secure a catch when seeding with a nurse crop and the one which gives the largest crop of hay in the year of seeding when no nurse crop is used. On several occasions we have cut in August a ton and a half of cured hay per acre from timothy seeded alone in May at the rate of six pounds per acre. And in such cases the mower bar was run high, to leave a long stubble, for winter protection.

In the second and third years, Western Rye grass decidedly outyields timothy and is especially adapted to the poorer and drier soils, for which timothy is ill-adapted. From the standpoint of chemical analysis Western Rye grass is superior to timothy; but it is not so well relished by stock, is slippery to handle and unless cured on the green side is inclined to be wiry and unpalatable.

How to Seed.—Whilst the surest way of seeding down in Grande Prairie is to sow the grass without a nurse crop, yet for the sake of holding weeds in check while the grass is getting established and also for the sake of securing a maximum return of feed in the year of seeding down, it appears probable that the most economical way will be to use a nurse crop of oats or barley (usually oats) sown thinly and late—probably some time in the latter half of May. From oats sown May 21, 1919, at two and a half bushels per acre and bound August 24 in the milk stage, two and a half tons of oat hay was harvested and promising catches of ten kinds of grasses and clovers obtained.

Grass Seed Production.—Western Rye grass, timothy, red clover, alsike and sweet clover have all demonstrated their ability to produce germinable seed and it is believed that the production of Rye grass and timothy seed would be a profitable line of production for many farmers on the lower lands, these crops being more frost-hardy than any of the common cereals, even oats.

Miscellaneous Forage Crops.—Turnips are the safest field root.

Sunflowers are hardy on the higher lands at least and may yet fill a large place for the provision of succulent winter feed, once we have silos to put them in. They should be sown early in May.

POTATOES.

In six years' residence the experimentalist has never failed to produce some surplus of potatoes for sale, though in the first few seasons he did not plant early enough for best results. In 1919, two and half acres averaged over 300 bushels and one or two plots went as high as 450 bushels per acre.

To produce potatoes regularly on the average Grande Prairie farm, one should:—

1. Choose an early variety.
2. Plant early in May on well-prepared land.
3. Plant fairly shallow as the ground is often warm at the surface when it is cold three or four inches down.
4. Hill early and moderately deep. This reduces yield, but improves quality, protecting from sunburn and early fall frosts.
5. Dig before the first of October.

VEGETABLES.

While the cool, dry weather usually predominant in spring and early summer is a drawback in vegetable growing, yet with preparedness, perseverance and care the staple kinds may be grown successfully and of a rare quality. For example, the difference in flavour between carrots grown in Ontario and Grande Prairie is so great as to suggest contrast rather than comparison. Seven-pound heads of cauliflower, white, firm and exquisite of flavour, were produced without special pains in 1918. A hotbed is often of great advantage in starting plants of the cabbage class. Peas are easy to grow, of fine quality, very productive and usually extend over a considerable season, sometimes two months.

An important point in starting fine-seeded vegetables is to have the land fall-prepared so that in spring it need not be disturbed except to the depth of rake or harrow teeth.

SMALL FRUITS.

One of the pioneer fruit growers of Grande Prairie is Mrs. C. H. Johnson, of Beaverlodge, who has made a thorough success with strawberries and, on a smaller scale, with raspberries, currants and gooseberries.

Red, white and black currants, set out in 1916, have done exceedingly well at the Experimental Station. Fourteen sets of Herbert raspberries set out at the same time have multiplied into a row ninety rods long, besides furnishing a start to many settlers. Strawberry plants received from Ottawa never survived until 1919 but a row of plants obtained locally and transplanted in 1918 nearly all lived and are doing splendidly. Gooseberries of several varieties were planted in 1919 and some survived. Attempt is being made to cultivate the native Saskatoon. Apple trees transplanted in 1918 are still alive, though killing back considerably each winter.

ORNAMENTALS.

Many ornamental plants are thriving, notably Manitoba maples, caraganas, Chinese lilacs and spiraeas. White spruce was successfully transplanted last season and wild honeysuckle is being propagated satisfactorily while Tartarian honeysuckle, high-bush cranberry and some other species are growing with a greater or less degree of success.

Of flowers, the sweet pea and pansy are particularly successful though Iceland and Oriental poppies, columbines, larkspurs and many others are proving hardy. With experience the list will lengthen and it is already certain that not only profitable farms but attractive farm homes are possible in the North.

A GREAT FUTURE ASSURED.

Climatic and soil conditions in Grande Prairie demand and give scope to those qualities of mind and character that pertain to the highest type of civilization. During six years' residence the writer's faith has steadily increased. It is a case merely of learning the limitations, emphasizing the adaptabilities and making the most of these. The resources are here and we have the quality of population to do the rest. With adequate transportation service, the Peace River region should develop into one of the finest, fairest and foremost mixed-farming regions north of the gulf of Mexico.





